

July 12, 1972

Ms. Miriam Guido
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Dear Ms. Guido:

Thank you for sending me the draft of the MLAP petition to the Occupational Health and Safety Administration. I have a few comments on what I consider to be errors of fact or of emphasis in your draft. I speak for myself, of course, rather than in any official capacity for the California State Department of Public Health or Community Studies on Pesticides. However, I might point out that Dr. Thomas Milby has read the following remarks and, with one possible exception, noted below, concurs with the concepts if not with the exact language.

1. On page 3, footnote 4, this statement appears: "The Congress, with the Environmental Protection Agency's approval, refused to extend FIFRA to farm workers." This is inaccurate on at least three counts. First, it is not FIFRA to which you refer, but a new omnibus act designed to replace FIFRA in toto: the Federal Environmental Pesticide Control Act, which will probably become known by the acronym FEPCA. Secondly, Congress hasn't refused (or assented) to do anything about FEPCA; to this date, it hasn't taken action, and in view of the certainty that the Senate version will differ from the House's, it is problematic whether final action will be taken this session at all. Thirdly, it is most unfair to imply that FEPCA excludes farm workers from its protections, and that Congress, EPA, or anyone else has "refused" to remove this exclusion. The Act does not mention specific occupational groups because it is intended to protect all groups, occupational and otherwise, from pesticides or pesticide residues. Lest there be any doubt as to congressional intent regarding farm workers, I call your attention to the bottom of page 14 of Senate Committee report No. 92-838, in which it is part of the legislative record that "the bill requires the Administrator to require that the labeling and classification of pesticides be such as to protect farmers, farm workers, and (all) others . . ."
2. In the same footnote, on the same page, you state "The only agency which has involved itself with the Occupational Safety and Health Act is the Department of Agriculture . . ." The fact is that the National Institutes of Occupational Safety and Health (NIOSH), of HEW, has involved itself very deeply with setting of standards for the protection of farm workers -- has, indeed, been so anxious to move into this area that it has hovered

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on the brink of issuing re-entry times and other standards which, in my opinion, would have been overly precipitous.

3. Page 4: "...the Secretary (of Labor), upon the basis of information submitted to him in writting (sic) by any interested person' . . . may 'determine that a rule should be promulgated in order to serve the objectives of the Act.' " This is an inaccurate quote. Actually, after various qualifiers, the sentence concludes, "the Secretary may request the recommendations of an advisory committee appointed under section 7 of this Act." The Secretary of Labor does not possess the unilateral powers you impute to him. At least, on a basic and complex issue, he would never move without availing himself of the extensive consultative requirements of the Act. Under Section 22 of the Act, it is NIOSH which is "authorized to . . . develop and establish recommended occupational safety and health standards," while OSHA enforces them. In Section 21, DHEW is given even more specific responsibility for development of "criteria dealing with toxic materials . . . which will describe exposure levels that are safe for various periods of employment . . ." Unless these words do not mean what they say, it would seem the Secretary of Labor cannot promulgate pesticide residue criteria, even if he wanted to, without a recommendation from DHEW. OSHA has asked NIOSH for such recommendations as quickly as possible, and under the law there is nothing more the Secretary can legally do until that request is filled.
4. Middle of page 7: what is "the reluctant figure?"
5. Page 17, section a. How did you arrive at the figure of 60 days? This seems altogether at variance from the recognition on page 22, section d, that pesticides differ widely in longevity. The more fundamental weakness in this section, however, is its assumption that handwashing facilities "will substantially reduce the risk of poisoning due to dermal exposure." Not unless a worker washes every minute or two. I quote from a researcher who has probably done more on this subject than anyone else in the world, Dr. Howard Maibach of the University of California Medical School:

"We have determined that unless one washes almost instantaneously, one gets almost as much (parathion) absorbed as if one did not wash at all. In fact, washing at 8 hours seems to even increase penetration over not washing at all. Four hours shows no difference from not washing at all, likewise at 2 hours, and at 1 hour and 30 minutes, there was no statistically significant decrease. So if one waits even 30 minutes, one could say that it is really senseless to wash the skin. . . . One must wash as quickly as 1 minute after exposure to really get down to an effective wash period." (Conference on Protective Clothing and Safety Equipment for Pesticide Workers, Atlanta, May 2, 1972.)

More basically still, I object to an emphasis on handwashing facilities, in this context, because it presupposes "continual dermal contact with dangerous pesticide residues . . . in most agricultural hand labor operations." We must not presuppose any such thing. There must be no dangerous residues remaining by the time pickers, thinners, weeders, etc., enter the premises.

Farm workers should by all means have handwashing facilities -- but as a matter of fundamental human decency, rather than as a safety measure. You mention it in your proposed Sanitation Standard, along with drinking water and toilet facilities, and that is the proper place for it.

6. Page 18, section b. This, again, seems over-simplified. Types of equipment appropriate to protect spray applicators, formulators, etc., need not be uniform but may vary with toxicity of the material, concentration in which it is being applied, etc. There is a serious problem of getting workers to wear protective devices when the temperature is hot, as it usually is during spray season. As for requiring "that the farmer or grower see that the (harvest) worker wear a long sleeve shirt", this betrays a lack of awareness of the realities of farm labor, the action of pesticide residues, and the philosophy of a well-conceived safety program. If necessary to protect themselves from thorns, twigs, dirt, sun, etc., farm workers will wear long-sleeve shirts; if not, they will not. Nor would there be any point in their doing so, for OP's readily pass through cloth, and, in any event, other parts of the body absorb residues much more readily than the forearm. (E.g., the forehead seven times as much; the scalp four times as much. Maibach, op. cit.) Again, the most basic objection is that harvest workers should not have to be protected against dangerous levels of pesticide residue in the workplace: If there are any residues at all, they should be at levels known positively to be innocuous.

7. Section c, pages 19-21: Medical Supervision. Many questions here.

For example:

- a. What is the meaning of "regularly occupied?" California's Safety Order, from which this language was taken, may have been "operative for ten years," but it has operated with great ambiguity. By and large, the only group receiving anything close to systematic medical supervision consists of cropdusting pilots, even though mixers, loaders, flagmen, etc., may be even more heavily exposed.
- b. " . . . the employer shall engage the service of a licensed physician . . . This tends to make the physician a "company doctor", serving the employer more than the employee. I know of many cases in which the "medical supervision" provided by these company doctors is only a pro forma gesture, to give the appearance of conforming with the law.

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A cholinesterase test no more often than once a year, as is common practice, is meaningless. There should be some provision for ensuring that the physician's responsibility is to the employee rather than the employer. Perhaps the best way to do that is through the time-honored tradition of giving the worker freedom of choice of physician.

- c. " . . . cholinesterase tests for all employees who exhibit the symptoms of pesticide poisoning . . . " This is locking the barn door after the horse has been stolen. Cholinesterase testing is valuable principally as an early warning of potential danger. When a person has been so grossly poisoned that he shows the classical symptoms of vomiting, etc., there is often no time for diagnostic niceties. He should be given a cholinesterase regenerating agent at once, and these agents are so effective that, within minutes, a blood test will no longer indicate how low the ChE level actually was.
- d. "Where a large percentage, over ___% of the employees are suffering from such poisoning, the farm shall be inspected . . ." This is an amazing concession, for it implies that a small or medium percentage of poisonings is acceptable. The goal of industrial safety, of course, should be no poisonings. Indeed, the goal should be even more exacting than that. It should be the so-called "no effect" level: i.e., no significant physiological differences between workers in agriculture (or coal mining, sheet metal work, or any other industry or trade) and those in candy manufacturing (or electronics, bookkeeping, plumbing, or any other occupation). With respect to OP's, the "no effect" principle means that farm workers, taken as a group, should not exhibit cholinesterase levels which are statistically significantly lower than those of any other group. Which returns us to the primacy of preventive, as opposed to therapeutic, measures. In a proper regimen of medical supervision, there should never be a necessity to "provide medical care for those employees suffering from pesticide poisoning." The role of the physician should be to prescribe appropriate preventive steps, and through periodic checkups to ensure that employer and employees are faithfully following these steps.
- e. Restricted Activities. " . . . such employee shall be removed from the exposure." And who is going to support him and his family during this period of enforced unemployment? To the best of my knowledge, California and Hawaii are the only two states with any substantial amount of agriculture in which farm workers are covered by Workmens Compensation. And even here, benefits do not start until the eighth day off the job -- and are pegged at substantially less than prevailing wages. Almost invariably, then, a farm worker who is advised by a physician to stay off the job until his cholinesterase returns to normal, ignores the advice and goes right back to work.

In California, with its hundreds of thousands of agricultural laborers, I know of just one case in which a worker actually followed his doctor's advice, stayed home, and collected Workmens Compensation benefits for a depressed cholinesterase level. And he was able to do this only after a court fight.

- f. Your whole section on Medical Supervision seems to place unquestioning credence in the validity and reliability of cholinesterase testing. The more I work with it, the more skeptical I become about its reliability and validity at the individual level. As a research tool, taking farm workers or other population groups as a whole, I believe it has real value. But in individuals the chances are considerable of "false positives" (ChE depressions due to diurnal variation, diet, climate, laboratory error, or some other factor besides OP residues) and, even more disturbingly, of "false negatives" (a normal ChE reading when the individual has in fact sustained some neuromuscular damage). Medical opinion differs drastically as to what is a "clinically significant" loss in ChE activity. Some say as little as 20%. But Lebrun claimed, after feeding human subjects on dipterex, that "plasma ChE can be reduced to less than ten percent . . . of its normal value without toxic symptoms." And I have personally heard the medical director ^{of a chemical company} state that plasma ChE has no known physiological purpose and can therefore theoretically be inactivated entirely without harm. Given such uncertainties, I would far rather see a petition directed toward the development of a better indicator of OP exposure than blood cholinesterase activity.

8. Section d, pages 22-26: Worker Safety Time Intervals. This is where overwhelming emphasis should be placed, in the protection of harvest and pre-harvest field workers. The concept of re-entry periods does not apply, of course, to spray applicators--but, in my opinion, such applicators are not (or, at any rate, ought not to be) farm laborers in the usual sense, but a professional class of high skill, training, and appropriate compensation.

- a. The California intervals should not be extended uncritically to the whole nation for at least two reasons. (1) Only six of the 45 intervals were based on directly relevant data (Guthion and ethion in citrus; Guthion, ethion, Dibrom, and phosalone in grapes). In five out of these six cases, controlled experiments resulted in the establishment of longer re-entry periods than had previously been thought necessary. It would seem logical to assume that many of the remaining intervals, set in the absence of directly relevant data, are probably too short. (2) There is every reason to believe that rainfall, temperature, humidity, wind, etc., have much to do with the persistence of compounds. These factors vary tremendously -- between California citrus and Florida citrus, for example. In areas with abundant rainfall, shorter re-entry periods may be adequate. But this will require separate research in each geographical location. For the moment, we know of no way to extrapolate findings from one area to another.

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- b. On pages 25-26, there is some confusion, I think, between the concept of safe re-entry intervals, and the concept of threshold limit values. You suggest that organophosphate TLV's should be "formulated" and "made applicable to farm workers", on an emergency basis, during the period of time that studies are being conducted to establish proper re-entry intervals. The trouble is, TLV's cannot be separated from the setting of safe waiting periods. The two will be the outcome of the same research. I know of no way rationally to set TLV's on the strength of information presently available--largely limited to toxicity based on laboratory animal experiments. It would be rash indeed to say the maximum allowable should be 2 parts per million of this compound, .01 micrograms per square centimeter of that compound, etc. You have to set up a study which proves that at 5 parts per million there is some effect; at 3 parts per million there is no effect; building in the customary safety factor, you might then set the threshold limit value at 2 ppm. But how do you carry out such a study? Why, by waiting a certain number of days or weeks after application of the given compound to a given crop, and measuring the effects on study participants -- which are precisely the requirements for establishment of a safe re-entry period.
9. Section f, pages 26-27.
- a. Why do you feel one pound actual material per acre is the dividing line between safety and hazard? I can think of plenty of organic phosphates which are highly toxic in quantities of less than one pound per acre -- especially when applied in low volume dilutions, as is increasingly the practice.
- b. "... the potential entrant . . . will at least be sufficiently aware of the danger to have the opportunity to take precautionary measures." You put it more candidly than most persons who advocate posting of premises: the burden will be upon the potential entrant (I presume we are still talking about farm workers here) to assess the danger for himself, and to protect himself. Caveat emptor. This is not an acceptable philosophy of industrial health and safety. Nothing whatever should be presupposed of the worker himself: no sophisticated knowledge of relative toxicity, no knowledge of protective devices, nothing. The premises should be safe before he is instructed to enter them. The burden of providing a safe working environment should be entirely on the employer, as I have tried to argue with CRLA, from which you have evidently borrowed many of your concepts.
10. Record-keeping and reporting.
- a. There are a number of important types of information you do not call for: e.g., type of crop, type of pest to be controlled, acreage, AIA, diluents, "stickers," combinations of compounds, etc.

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- b. "... the union is the logical choice to oversee the application of this section ..." What union? There is only one state in which farm workers are really well organized, and that is Hawaii, where they are affiliated with the ILWU. In California, I would estimate that considerably less than 5% of the regularly-employed farm labor force belongs to the United Farm Workers Union. In most states there is no union at all -- and these tend to be the states with the worst pesticide programs. This being the case, would it not be preferable to simply specify that pesticide application records shall be public documents, available to any interested person? This would also avoid needlessly antagonizing those to whom any mention of the word "union" is as a red flag to a bull in a china shop.
- c. The State Department of Health "shall be supplied" with the specified information, and it shall in turn pass on the information to the U.S. Department of Labor. This leaves out some crucial elements in the equation. Who is to supply the State Department of Public Health? the grower? The applicator? A county health department? A county agricultural commissioner? How frequently are the reports to be submitted? In what form? What about states which already have smoothly-functioning pesticide reporting systems which do not involve the Department of Public Health? I suspect you are laboring under the old presumption that agriculture departments are by definition pro-pesticide, anti-worker, etc. That may be true in some places, but it is not true in the state with incomparably the best program of pesticide safety in the nation. California's program is entirely administered by the State Department of Agriculture. Would it not be better to allow for alternative mechanisms where they are already in operation and working well?

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I have saved my most basic, and most controversial, comment until last. On this point, I am not sure Dr. Milby would agree with me. It is my personal opinion that you should file two petitions -- one with the Secretary of Labor, as regards field sanitation, farm equipment safety standards (including spray equipment), etc. But when it comes to protecting farm workers from the effects of pesticide residues, I believe the key person is the Administrator of the Environmental Protection Agency and an appropriate petition should be addressed to him.

The reason I say that is this: under the Occupational Safety and Health Act, the Secretary of Labor has authority over employers and workplaces, but none over the processes by which pesticides are developed, registered, labeled, advertised, etc. It seems to me enormously less efficient, and in the long run probably less effective, to attempt to enforce pesticide residue safety programs through the nation's 500,000 agricultural employers (or however many there are) rather than through the relative handful of major pesticide manufacturers.

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I believe the burden should be on the manufacturer to prove that his product is safe when used as directed--for farm workers no less than the ultimate consumers of crops -- and if he has not done the necessary research to demonstrate this, his product should not be registered by EPA in the first place. Establishment of safe re-entry periods should be a precondition of a registration, and I do not think it is the taxpayer's responsibility to pay for this research through NIOSH. The responsibility should be the manufacturer's -- and there should be well-defined standards for the conduct of such research, so there is no room for fudging or hedging.

I have it on no less an authority than the immediate past Director of the Pesticide Regulation Division that there is ample latitude in the Federal Insecticide, Fungicide, and Rodenticide Act for the Administrator to lay down such a requirement if he chose to do so -- not only with respect to new applications for pesticide registrations, but with respect to products already on the market.

Why has he not chosen to do so? Everyone will have his own opinion, no doubt, but mine is that (1) there has been little or no demand for it up to now; (2) there has been little or no scientific consensus on the methodological and ethical standards which re-entry period research should meet. Neither of those conditions is going to obtain much longer, I hope. I look to groups such as yours to put pressure on EPA, and its Pesticide Regulation Division particularly, to take increased advantage of the administrative latitude it enjoys under FIFRA (and will enjoy under FEPCA). I would much prefer to have a law which specifies that re-entry period research shall be a precondition of registration, and have done what I could to get FEPCA amended accordingly. But if I have to, I will settle for a bill which grants the Administrator implicit power to require such research, through publication of regulations in the Federal Register.

As for re-entry research standards, the first authoritative statement on the subject will soon be issued by a Federal Task Group on Occupational Exposures to Pesticides. I believe it is going to be a good strong statement, calling for very exacting standards, and that it will take on added weight through being issued by a task force which includes representatives of the pesticide industry and "the agricultural community," as well as occupational medicine, public health, etc.

If a petition to the Administrator of EPA were timed to follow closely upon the release of this Task Group report, and if such a petition revealed intimate familiarity with the subject, I believe it would be taken very seriously and could yield benefits to farm workers of the very highest order.

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Ms. Miriam Guido

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I trust these comments, questions, and suggestions are taken in the constructive spirit in which they are intended, and that they reach you in time to be taken into account as you formulate the final version of your petition.

Sincerely yours,

Henry Anderson

HA/mj

cc: T.H. Milby, M.D.
W.F. Serat, Ph.D.